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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,371	01/02/2001	Yoichi Mochida	P/1071-1220	1674

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EXAMINER

BELLAMY, TAMIKO D

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,371

Applicant(s)

MOCHIDA, YOICHI

Examiner

Tamiko D. Bellamy

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-11 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because contains the word "means".

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2,3,5, and 7-11 recites the limitation "mechanism". There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 8\1, 9,10, and 11, the phrase "low resistance" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 6/1-3, 7/1-3, 8/1-3, and 10/1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. Touge et al. (6,134,961).

As to claim 1, Touge discloses in Fig. 2 an angular velocity sensor, a substrate 100 (col. 6, lines 25-26), an oscillator 7 disposed on the substrate 100, and a damping means 8a, 8b for suppressing the y-directional vibrations of the oscillator 7 (col. 11, lines 36-54). Impact to the substrate 100 would inherently be damped by damping means 8a, 8b.

As to claim 2, Touge discloses in Fig. 2 an oscillator 11 supported on the substrate 100 by at least one oscillator support beam 8a, an oscillation-generating means 5,6, and an angular-velocity detecting means 12, 13 for detecting a displacement of the oscillator as an angular velocity.

As to claim 3, Touge discloses in Fig. 2 an damping mechanism formed of a frame support beam 8, and wherein the oscillator 11 is supported on the inside of the frame 7 via a oscillator support beam 9a.

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As to claims 6/1-3, Touge discloses in Fig. 2 an oscillator 11 formed to be displaced in an oscillating direction parallel to the substrate 100 and in the detection direction orthogonal to the substrate 100, and a damping means 9a, 9b for suppressing the x-directional vibrations of the oscillator 7, and damping means 8a, 8b for suppressing the y-directional vibrations of the oscillator 7. Together damping means 8a, 8b and 9a, 9b suppress x and y-direction vibrations of the oscillator 7. Damping means 8a, 8b and 9a, 9b would inherently damp impact to the substrate 100.

As to claims 7/1-3, Touge discloses in fig. 2 an oscillator 11 formed to be displaced in an oscillating direction and detecting directions parallel to the substrate 100 and orthogonal to each other.

As to claims 8/1-3 and 10/1-3, Touge discloses in Fig. 2 an angular velocity sensor wherein the oscillator 11, the oscillator support beam 9a, and the damping mechanism 8a, 8b are unitarily formed by a polycrystalline silicon material (col. 6, lines 40-42, col. 11, lines 8-12).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, and 6-11/4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touge (6,134, 961).

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As to claim 4, Touge discloses an angular velocity sensor wherein the oscillator 11, the oscillator support beam 9a, and the frame 7 have an entire resonant frequency that is set (col. 8, lines 58-60).

As to claim 6/4, Touge discloses in Fig. 2 an oscillator 11 formed to be displaced in an oscillating direction parallel to the substrate 100 and in the detection direction orthogonal to the substrate 100, and a damping means 9a, 9b for suppressing the x-directional vibrations of the oscillator 7, and damping means 8a, 8b for suppressing the y-directional vibrations of the oscillator 7. Together damping means 8a, 8b and 9a, 9b suppress x and y-direction vibrations of the oscillator 7. Damping means 8a, 8b and 9a, 9b would inherently damp impact to the substrate 100.

As to claim 7/4, Touge discloses in fig. 2 an oscillator 11 formed to be displaced in an oscillating direction and detecting directions parallel to the substrate 100 and orthogonal to each other.

As to claims 8/4, and 9-11/4, Touge discloses in Fig. 2 an angular velocity sensor wherein the oscillator 11, the oscillator support beam 9a, and the damping mechanism 8a, 8b are unitarily formed by a polycrystalline silicon material (col. 6, lines 40-42, col. 11, lines 8-12). Touge does not specifically disclose an angular velocity sensor having the oscillator support beam, and frame having an entire resonance frequency set to $1/(\text{square root of } 2)$ times more than less a resonant frequency of the oscillator. However, having the oscillator support beam, and frame having an entire resonance frequency set to $1/(\text{square root of } 2)$ times more than less a resonant frequency of the oscillator would be inherent to use as the designers personal preference.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Touge to include the oscillator support beam, and frame having an entire resonance frequency set to $1/(\text{square root of } 2)$ times more than less a resonant frequency of the oscillator for the purpose of providing an angular velocity sensor that is able to suppress the degradation of the signal-to-noise ration associated with leaks of the vibration driving signal thereby heighten the detection precision for the angular velocity sensor (Touge, col. 2, lines 52-56).

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

Ljung discloses a Coriolis gyro sensor of particular interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (703) 305-4971. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Tamiko Bellamy

T.B.

July 15, 2002

A handwritten signature in black ink, appearing to read "Hezron Williams", with a long horizontal flourish extending to the right.

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800